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CAMPBELL STEPHENSON ASCOLESE, LLP
4807 SPICEWOOD SPRINGS RD.
BLDG. 4, SUITE 201
AUSTIN, TX 78759

EXAMINER	
LE, DIEU MINH T	
ART UNIT	PAPER NUMBER
2114	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/820,257	JAIN ET AL.	
	Examiner	Art Unit	
	Dieu-Minh Le	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-90* is/are pending in the application.

4a) Of the above claim(s) *1-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-90* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Part III DETAILED ACTION

Specification

1. Claims 14-90 are presented for examination; claims 1-13 have been cancelled.

Double Patenting Rejections

2. Claims 14-90 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-42 of U.S. patent 6,751,746. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter contains obvious modifications to previous claims 1-42 of U.S. patent 6,751,746.

As to claims 14, 38, 55, 74 and 84, these claims include limitations of: first path is between a first node and a second node, second path is between the first node and the second node, and path disjoint, which already included in claims 1-42 of U.S. patent 6,751,746. It is well settled that the omission of an element and its function [i.e.,heap data structure] is an obvious expedient if the remaining elements perform the same function as before. In re Karlson, 136, USPQ 184 (CCPA 1963).

Also note Ex parte Rainu, 168 USPQ 375 (Bd. App. 1969). Therefore, omitting various elements from the previous claimed subject matter would have been obvious to one of ordinary skill in the art in this case since the remaining elements do in fact perform the same functions as before. Elimination/Changing of an element or its function will not serve as a basis for patentability.

3. The obviousness-type double patenting rejection is a judicially established doctrine based upon public policy and is primarily intended to prevent prolongation of the patent term by prohibiting claims in a second patent not patentably distinct from claims in a first patent. *In re Vogel*, 164 USPQ 619 (CCPA 1970). A timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(b) would overcome an actual or provisional rejection on this ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. § 1.78(d).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35

U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 14-90 are rejected under 35 U.S.C. § 103(a) as being unpatentable Ariel Orda and Raphael Rom (Routing with packet duplication and elimination in computer networks, IEEE Transactions on Communications, Vol. 36, No. 7, July, 1988 hereafter referred to as Orda et al.) in view of Ofek (U.S. 6,760,328 hereafter referred to as Ofek).

As per claim 14:

Orda et al. substantially teaches the invention. Orda et al. explicitly teaches:

- a method comprising:
- network comprises a plurality of network elements and each one of network elements coupled to at least one other of network elements by at least one of a plurality of links [abstract, fig. 1 and 5, pg. 860];
- identifying a first network component in a first path, wherein the first path is between a first node and a second node [abstract, fig.1, page 860-863];
- identifying a second network component in a second path, [abstract, fig.1, page 860-863];

- the second path is between the first node and the second node, and

the first path and the second path are disjoint [pg. 681];

- removing the first identifier (i.e., discard or eliminate) [pg. 682 and 866].

Orda et al. does not explicitly address:

- first and second identifier stored in a data structure.

However, Orda et al. does disclose capability of:

- Routing with packet duplication and elimination in computer network [abstract, fig.1 and 4] comprising capability of:

- ***a distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…*** [abstract, pg. 860] ***via multiple node, paths, and data packets including sources and destination addresses*** (i.e., data structure) [pg. 861].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Orda et al.'s ***distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…via multiple node, paths, and data packets including sources and destination addresses*** (i.e., ***data structure***) as being the first and second identifier stored in a data structure as claimed by Applicant. This is because Orda et al. explicitly performed data routing and duplicating within multiple network modes and paths

in order to maximize the network transmission performance and throughput via OSFP. By utilizing these capabilities, the communication path between the data network components (i.e., host/servers, switches, routers environment) can be directed or redirected promptly and functioned properly during failover switching process in supporting the network operation; second, by applying the ***data packet structure including header, timestamp, priority bit, etc... based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** as taught by Ofek in conjunction with the routing with packet duplication and elimination in computer network as taught by Orda et al., the multi-path communication networking system including duplicating capability can enhance its operation performance, more specifically to ensuring the communication path/node error detected, corrected, and replaced in proper and efficient manner.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to improve the network communication system operation

availability and network/system performance therein with a mechanism to enhance the data node/path connectivity, data debugging, data reliability, and data throughput which eventually will increase its performance, such as data throughput between internal and external devices.

As per claims 15-16 and 20:

Orda et al. further explicitly teaches:

- identifying a plurality of network components in the first path [abstract, fig. 1 and 5, pg. 860];

- identifying a first network component in a first path, wherein the first path is between a first node and a second node [abstract, fig.1, page 860-863];

- identifying a second network component in a second path, [abstract, fig.1, page 860-863];

- removing the identifiers corresponding to the network components in the first path

(i.e., discard or eliminate) [pg. 682].

- identifying a third network component, in a third path between the first node and the

second node [abstract, fig. 1 and 5, pg. 860];

- the first path, the second path, and the third path are disjoint [pg. 681];

Orda et al. does not explicitly address:

- identifiers stored in a data structure.

However, Orda et al. does disclose capability of:

- Routing with packet duplication and elimination in computer network [abstract, fig.1 and 4] comprising capability of:

- ***a distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…[***abstract, pg. 860] ***via multiple node, paths, and data packets including sources and destination addresses*** (i.e., data structure) [pg. 861].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path***

identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Orda et al.'s ***distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…via multiple node, paths, and data packets including sources and destination addresses*** (i.e., ***data structure***) as being the first and second identifier stored in a data structure as claimed by Applicant. This is because Orda et al. explicitly performed data routing and duplicating within multiple network modes and paths in order to maximize the network transmission performance and throughput via OSFP. By utilizing these capabilities, the communication path between the data network components (i.e., host/servers, switches, routers environment) can be directed or redirected promptly and functioned properly during failover switching process in supporting the network operation; second, by applying the ***data packet structure including header,***

timestamp, priority bit, etc... based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port as taught by Ofek in conjunction with the routing with packet duplication and elimination in computer network as taught by Orda et al. enhance its operation performance for the same reasons set forth as described in claim 14, **supra.**

As per claims 17-19:

Orda et al. further teaches the invention:

- sending a packet from the first node via the first path [abstract, fig. 4, pg. 863];
- sending a duplicate of the packet from the first node via the second path [abstract, fig. 4, pg. 863];
- the first and second network components are nodes. [abstract, fig.1, page 860-863];
- the first and second network components are links, [abstract, fig.1, page 860-863];

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31].

As per claims 21-23 and 27:

Orda et al. further explicitly teaches:

- sending an additional duplicate of the packet from the first node via the third path [abstract, fig. 4, pg. 863];

- receiving both of the packet and the duplicate of the packet at the second node. [abstract, fig.1, page 860-863];

- discarding one of the packet and the duplicate in response to the sequence number

associated with each of the packet and the duplicate (i.e., eliminate) [pg. 682];

- associating a sequence number with each of the packet and the duplicate of the packet [fig. 1-4, pg. 682].

- storing cost and topology information, wherein the cost and topology information is used to identify the first path [fig. 1-4, pg. 864].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***data packet sequencing*** [fig. 6A, col. 2, lines 36-45; col. 8, lines 48 through col. 9, line 11; col. 14, lines 13-31 and col. 23, lines 1-29].

As per claims 24-26 and 28:

Orda et al. explicitly teaches:

- a method comprising:

- network comprises a plurality of network elements and each one of network elements coupled to at least one other of network elements by at least one of a plurality of links [abstract, fig. 1 and 5, pg. 860];

- Open Shortest Path First (OSPF) algorithm (i.e., best link/route, fictitious links, optimal links) [pg. 860, pg. 862-863].

Orda et al. does not explicitly address:

- Voice over Internet Protocol (VoIP) packet;
- a label-switching protocol;
- a heap data structure.

However, Orda et al. does disclose capability of:

- Routing with packet duplication and elimination in computer network [abstract, fig.1 and 4] comprising capability of:
- a distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…[abstract, pg. 860] via multiple node, paths, and data packets including sources and destination addresses (i.e., data structure) [pg. 861].
- **a multiple tree approach (i.e., binary search tree) [pg. 861].**

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure (i.e., ***heap data structure***) including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31] as well as ***voice data communication*** (i.e., VoIP) [col. 2, lines 45-65].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realize that the combination of Orda et al's ***distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…via multiple node, paths, and data packets including sources and destination addresses*** (i.e.,

data structure) and Ofek's ***data packet structure (i.e., heap data structure) including header, timestamp, priority bit, etc... based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** as well as ***voice data communication (i.e., VoIP) do teach applicant's invention.*** This is because Orda et al. in combining with Ofek explicitly performed data routing and duplicating within multiple network modes and paths in order to maximize the network transmission performance and throughput via OSFP.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to achieve the fault tolerant within the networking environment so that the network can perform with maximum throughput and optimal data routing path transmission.

As per claims 29:

Orda et al. explicitly teaches:

- a method comprising:

- network comprises a plurality of network elements and each one of network elements coupled to at least one other of network elements by at least one of a plurality of links [abstract, fig. 1 and 5, pg. 860];

- sending a packet from a first network element to a second network element via a first path [abstract, fig. 4, pg. 863];

- sending a duplicate of the packet from the first network element to the second network element via the second path [abstract, fig. 4, pg. 863];

- the first path and the second path are disjoint [pg. 681];

Orda et al. does not explicitly address:

- multiprotocol label switching protocol (MPLS).

However, Orda et al. does disclose capability of:

- Routing with packet duplication and elimination in computer network [abstract, fig.1 and 4] comprising capability of:

- a distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet

switching, telecommunication traffic, etc…[abstract, pg. 860] via multiple node, paths, and data packets including sources and destination addresses (i.e., data structure) [pg. 861].

- a multiple tree approach (i.e., binary search tree) [pg. 861].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realize that the combination of Orda et al.'s

distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…via multiple node, paths, and data packets including sources and destination addresses (i.e., ***data structure***) and Ofek's ***data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port do teach applicant's invention***. This is because Orda et al. in combining with Ofek explicitly performed data routing and duplicating within multiple network modes and paths in order to maximize the network transmission performance and throughput via OSFP.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to achieve the fault tolerant within the networking environment so that the network can perform with maximum throughput and optimal data routing path transmission.

As per claims 30-31:

Orda et al. explicitly teaches:

- a method comprising:

- network comprises a plurality of network elements and each one of network elements coupled to at least one other of network elements by at least one of a plurality of links [abstract, fig. 1 and 5, pg. 860];

- the identifying the first path is based on an Open Shortest Path First (OSPF) algorithm (i.e., best link/route, fictitious links, optimal links) [pg. 860, pg. 862-863];

- the identifying the second path is based on the OSPF algorithm (i.e., best link/route, fictitious links, optimal links) [pg. 860, pg. 862-863].

As per claims 32-33:

Orda et al. further explicitly teaches:

- receiving both of the packet and the duplicate of the packet at the second node. [abstract, fig.1, page 860-863];

- discarding one of the packet and the duplicate in response to the sequence number associated with each of the packet and the duplicate (i.e., eliminate) [pg. 682];

- associating a sequence number with each of the packet and the duplicate of the packet [fig. 1-4, pg. 682].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***data packet sequencing*** [fig. 6A, col. 2, lines 36-45; col. 8, lines 48 through col. 9, line 11; col. 14, lines 13-31 and col. 23, lines 1-29].

As per claim 34:

Orda et al. explicitly teach:

- a method comprising:

- network comprises a plurality of network elements and each one of network elements coupled to at least one other of network elements by at least one of a plurality of links [abstract, fig. 1 and 5, pg. 860];

- Open Shortest Path First (OSPF) algorithm (i.e., best link/route, fictitious links, optimal links) [pg. 860, pg. 862-863].

Orda et al. does not explicitly address:

- Voice over Internet Protocol (VoIP) packet

However, Orda et al. do disclose capability of:

- Routing with packet duplication and elimination in computer network [abstract, fig.1 and 4] comprising capability of:

- a distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…[abstract, pg. 860] via multiple node, paths, and data packets including sources and destination addresses (i.e., data structure) [pg. 861].

- a multiple tree approach (i.e., binary search tree) [pg. 861].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access***

control) addresses, for mapping from an input port to an output port [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31] as well as ***voice data communication*** (i.e., VoIP) [col. 2, lines 45-65].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realize that the combination of Orda et al.'s ***distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…via multiple node, paths, and data packets including sources and destination addresses*** (i.e., ***data structure***) and Ofek's ***data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** as well as ***voice data communication (i.e., VoIP) do teach applicant's invention.*** This is because Orda et al. in combining with Ofek explicitly performed data routing and duplicating within

multiple network modes and paths in order to maximize the network transmission performance and throughput via OSFP.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to achieve the fault tolerant within the networking environment so that the network can perform with maximum throughput and optimal data routing path transmission.

As per claims 35-37:

Orda et al. further explicitly teach:

- network comprises a plurality of network elements and each one of network elements coupled to at least one other of network elements by at least one of a plurality of links [abstract, fig. 1 and 5, pg. 860];

- identifying a first network component in a first path [abstract, fig.1, page 860-863];

- identifying a second network component in a second path, [abstract, fig.1, page 860-863];

- removing the first identifier (i.e., discard or eliminate) [pg. 682 and 866].

- the first and second network components are nodes [abstract, fig.1, page 860-863];

- the first and second network components are links [abstract, fig.1, page 860-863].

Orda et al. does not explicitly address:

- first and second identifiers stored in a data structure.

However, Orda et al. do disclose capability of:

- Routing with packet duplication and elimination in computer network [abstract, fig.1 and 4] comprising capability of:

- ***a distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…*** [abstract, pg. 860] ***via multiple node, paths, and data packets including sources and destination addresses*** (i.e., data structure) [pg. 861].

In addition, Ofek explicitly teaches:

- A method for data packets transmission network [abstract, fig. 1, col. 1, lines 10-17] comprising:

- data packet structure including header, timestamp, priority bit, etc… based on path identifiers used in

supporting data communication transmission via ***Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** [fig. 6A, col. 8, lines 48 through col. 9, line 11 and col. 14, lines 13-31].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Orda et al.'s ***distributed algorithm including optimal, deadlock free, loop free, packet duplication, network reliability, packet loss control, routing control, congestion control, packet switching, telecommunication traffic, etc…via multiple node, paths, and data packets including sources and destination addresses*** (i.e., ***data structure***) as being the first and second identifier stored in a data structure as claimed by Applicant. This is because Orda et al. explicitly performed data routing and duplicating within multiple network modes and paths in order to maximize the network transmission performance and throughput via OSFP. By utilizing these capabilities, the communication path between the data network components (i.e., host/servers, switches, routers environment) can be directed or

redirected promptly and functioned properly during failover switching process in supporting the network operation; second, by applying the ***data packet structure including header, timestamp, priority bit, etc... based on path identifiers used in supporting data communication transmission via Internet MPLS (multi protocol label swapping or tag switching) labels, ATM virtual circuit identifier and virtual path identifier (VCI/VPI), and IEEE 802 MAC (media access control) addresses, for mapping from an input port to an output port*** as taught by Ofek in conjunction with the routing with packet duplication and elimination in computer network as taught by Orda et al., the multi-path communication networking system including duplicating capability can enhance its operation performance, more specifically to ensuring the communication path/node error detected, corrected, and replaced in proper and efficient manner.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to improve the network communication system operation availability and network/system performance therein with a mechanism to enhance the data node/path connectivity, data debugging, data reliability, and data throughput which

eventually will increase its performance, such as data throughput between internal and external devices.

As per claims 38-48:

These claims are the same as per claims 14-28. The only minor different is that these claims are directed to a **computer readable medium comprising program instructions executable** for identifying a first network component, removing the first identifier, identifying a second network component, etc… instead of the method for identifying a first network component, removing the first identifier, identifying a second network component, etc… as described in claims 14-28. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to realize that a **computer readable medium** is a necessary item for such client-server, computer/host- server/controller data storage networking system, more specifically, data path communication in supporting multi-data paths communication process. Since the data network communication apparatus obviously needs a means for instruction or code means resided within the machine-readable storage medium for performing the data storing, receiving, transmitting operation via the multi-data paths capability. Therefore, these

claims are also rejected under the same rationale applied against claims 14-28.

As per claims 49-54:

These claims are the same as per claims 29-37. The only minor different is that these claims are directed to a **computer readable medium comprising program instructions executable** to send a packet from a first network element to a second network element, send a duplicate of the packet from a first network element to a second network element etc... instead of the method for sending a packet from a first network element to a second network element, sending a duplicate of the packet from a first network element to a second network element, etc... as described in claims 29-37. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to realize that a **computer readable medium** is a necessary item for such client-server, computer/host- server/controller data storage networking system, more specifically, data path communication in supporting multi-data paths communication process. Since the data network communication apparatus obviously needs a means for instruction or code means resided within the machine-readable storage medium for performing the data storing, receiving, transmitting operation via the multi-

data paths capability. Therefore, these claims are also rejected under the same rationale applied against claims 29-37.

As per claims 55-66:

Due to the similarity of claims 55-66 to claims 14-28 except for a system comprising **MEANS** for identifying a first network component, **MEANS** for removing the first identifier, **MEANS** for identifying a second network component, etc... instead of the method for identifying a first network component, removing the first identifier, identifying a second network component, etc... as described in claims 14-28; therefore, these claims are also rejected under the same rationale applied against claims 14-28.

As per claims 67-73:

Due to the similarity of claims 67-73 to claims 29-37 except for a system comprising **MEANS** for sending a packet from a first network element to a second network element, **MEANS** sending a duplicate of the packet from a first network element to a second network element, etc... instead of the method for sending a packet from a first network element to a second network element, sending a duplicate of the packet from a first network element to a second network element, etc... as described in claims

29-37; therefore, these claims are also rejected under the same rationale applied against claims 29-37.

As per claims 74-83:

Due to the similarity of claims 74-83 to claims 14-28 except for a system comprising capabilities of identify a first network component, remove the first identifier, identify a second network component, etc… instead of the method for identifying a first network component, removing the first identifier, identifying a second network component, etc… as described in claims 14-28; therefore, these claims are also rejected under the same rationale applied against claims 14-28.

As per claims 84-90:

Due to the similarity of claims 84-90 to claims 29-37 except for a system comprising capabilities for sending a packet to a second node via the first path using MPLS, sending a duplicate of the packet to a second node via the second path using MPLS, etc… instead of the method for sending a packet from a first network element to a second network element, sending a duplicate of the packet from a first network element to a second network element, etc… as described in claims 29-37;

therefore, these claims are also rejected under the same rationale applied against claims 29-37.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571)272-3644. The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Informat ion Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2114

DML
12/26/06